

# **VEHICLE TRACKING SYSTEM**

## **ABSTRACT OF THE DISCLOSURE**

A vehicle tracking system for a vehicle is configured to track a remote vehicle by template matching between a reference image and an input image obtained by a camera  
5 mounted on the vehicle. The position and distance of a remote vehicle is determined by calculating a position and an enlargement/reduction ratio of a portion of the input image that provide a maximum correlation value between the portion of the input image and the reference template that is greater than a threshold value. The reference template is  
10 updated by calculating a dispersion of at least one pixel of the reference template with respect to a corresponding pixel in a vehicle image extracted from the input image that provides the maximum correlation value, and by deleting the at least one pixel when the dispersion of the at least one pixel is equal to or greater than a threshold value.